BUILDING ON AN INNOVATIVE WATERSHED PARTNERSHIP TO RESTORE FISHERIES, FISH HABITAT & SUPPORTING RIVER WATER QUALITY:

AN INTERSTATE PROPOSAL FOR THE GREATER NARRAGANSETT BAY WATERSHED (R.I. & MASS.) AND RHODE ISLAND COASTAL WATERSHEDS

This proposal builds on and expands existing watershed partnerships, bringing two state-supported efforts - the Rhode Island Watershed Partnership and the Massachusetts Watershed Initiative - together with the bi-state Partnership for Narragansett Bay (PNB) which works through the auspices of the Coastal Institute at the University of Rhode Island and is supported by the Narragansett Bay National Estuary Program. This joint proposal was formed because of the unique relationship between Rhode Island, Massachusetts and the Narragansett Bay watershed. The watershed extends deep into both states with over 60% in Massachusetts. The proposal recognizes that activities and problems throughout the watershed are interconnected and that the challenge of reaching across political jurisdictions needs to be overcome if bay and watershed health is to be restored and maintained. The proposal's approach increases collaboration and integration between stakeholders from each state, between state agencies, and within local communities. All three organizations joined together for this submittal represent a broad and diverse stakeholder basis for this proposal. Other partner organizations include the Blackstone River National Heritage Corridor Commission, the Rhode Island Rivers Council, the R.I. Watershed Coordinating Council, the Southeast Regional Planning and Economic Development District, environmental nongovernmental organizations, universities, private sector partners, watershed councils and teams, and the Narragansett Bay National Estuary Program. The proposal is intended to implement common goals and objectives from the Narragansett Bay Comprehensive Conservation and Management plan as well as from nested state watershed action plans and special watershed initiatives such as those associated with a national heritage corridor river basin.

The involvement of local watershed organizations and communities is an essential element in reaching the proposal's goals. These organizations and localities have already done highly effective work on watershed assessments, problem identification, public involvement and education and in identifying key environmental

improvement projects. This proposal reflects this involvement in that local municipalities, non-profit organizations and academics are sponsors and implementers of individual projects.

Priority watershed projects related to fisheries restoration and supporting water quality improvements are ready to proceed have been targeted for fast track implementation; these projects meet criteria of the EPA Watershed Initiative. These projects have been drawn from watershed action plans from across the larger watershed as well as from Bay watershed planning processes like the Comprehensive Conservation and Management Plan for the Bay, regional restoration plans and TMDL implementation plans. All of the waterbodies targeted in this proposal are on the states' 303 (d) Lists of Impaired Waters. One major river in the watershed, the Blackstone, is a designated American Heritage River; another, the Taunton, is currently under consideration by the National Park Service for Wild and Scenic River designation.

The existing Partnership for Narragansett Bay provides a strong connecting presence for this work. The PNB was formed as a result of the Narragansett Bay Summit 2000, an well attended stakeholder-based conference held to examine the economic and environmental uses of the Bay and watershed and to identify measures to more effectively coordinate environmental and economic planning and action. One of the primary recommendations from the Summit is to work across state lines to implement key environmental improvement projects (refer to Summit report – Appendix A).

The PNB is engaged in interstate watershed projects that are linked to and support the grant projects proposed here. These include development of watershed ecological indicators to assess and report ecosystems status; development of a comprehensive monitoring strategy for bay and watershed; and creation of a new state of the bay and watershed report based on studies completed over the last decade. One successful existing PNB program that would come into play in this proposal is the allocation of a small portion of the grant funds to the PNB Bay Watershed Action Grants (BayWAG) program, instituted in 2002. Through this innovative and well-received bi-state grant program, the PNB was able to fund $120, 000 in key watershed action projects out of requests received for over $400,000 in projects. The BayWAG program element builds on a

successful existing mechanism for implementing ready-to-go projects.

OBJECTIVES OF THE PROPOSAL

1. To restore anadromous fish runs in the Narragansett Bay and Rhode Island coastal watersheds.
2. To protect anadromous fish runs in the Narragansett Bay and Rhode Island coastal watersheds by maintaining or repairing existing fishways.
3. To implement selected TMDL recommendations that will improve water quality to support anadromous fish runs and watershed health and biodiversity.
4. To communicate to the public and policy makers the measurable results and accomplishments derived from this grant funding and to increase public involvement and awareness of watershed health and resource values.
5. To build on and enhance existing innovative watershed partnerships to achieve the above objectives and to set the stage for further watershed-wide collaboration.

COMMON GOALS ADDRESSED BY THE PROPOSAL: The Narragansett Bay CCMP (see Narragansett Bay CCMP excerpt in Appendix B., *CCMP Goals*) states that Rhode Island and Massachusetts should act more effectively to manage living resources such as fisheries, fish runs and habitat. It also states that the states should prevent degradation of and improve water quality in the watershed. A third CCMP goal addressed in this proposal seeks greater interstate coordination and collaboration to implement watershed goals. These goals are mirrored in the subwatershed action plans associated with both the R.I. and Massachusetts watershed initiatives.

WATERSHED CHARACTERIZATION: The Narragansett Bay watershed drains an area of 1,853 square miles; 61% of the watershed is in Massachusetts. Home to more than 2 million people, the watershed is quite urbanized (average of over 1100 people per square mile) yet contains considerable suburban and exurban lands. The bay itself is a relatively well-flushed, high-salinity waterbody which receives a daily freshwater input of 2.4 billion gallons. Key problems facing the bay and watershed include fisheries declines and management challenges; habitat loss, degradation and fragmentation; impacts of land and coastal development on water quality; nutrient overloading impacts on water oxygen levels; air quality degradation; contaminated

sediments in rivers and the bay; and threat of invasive species.

OVERALL WATERSHED PLANNING EFFORT: In 1987, Congress, through Clean Water Act amendments, created the National Estuary Program to implement a holistic approach to coastal watershed management. In 1993, the Narragansett Bay Comprehensive Conservation and Management Plan was completed and implementation began through the creation of the Narragansett Bay Estuary Program. With a federal investment of about $4 million, the Estuary Program has leveraged over $8 million in other funds. In recent years, both Massachusetts and Rhode Island have instituted statewide watershed approaches, assisting local stakeholders in developing watershed action plans geared toward measurable environmental improvements. A third successful regional planning activity has been a collaborative effort to create a coastal habitat restoration plan for the Bay. Led by a regional Habitat Restoration Team, this effort has produced a planning document (see *Restoration Blueprint* in Appendix B.) and has been instrumental in securing funding and partnerships for habitat and fisheries restoration. Most recently, the formation of the Partnership for Narragansett Bay, arising from the Bay Summit 2000, has provided a true cross-watershed, interstate mechanism for Bay watershed and regional planning and action.

PROPOSED PROJECTS The included projects were selected by an interstate proposal committee and ranked according to the EPA criteria. All projects have strong readiness to proceed status (many with full or partial engineering in place), target measurable environmental results, include evaluation procedures, have broad stakeholder support and involvement, and will be targeted for specific outreach actions.

Pawtuxet River Fish Passage: This project will re-establish annual runs of herring and shad on the Pawtuxet River, located on the western shore of upper Narragansett Bay, providing immediate environmental improvements for the river and Narragansett Bay. The Pawtuxet was one of the "working" rivers of industrialized New England and was once referred to as "Rhode Islands Dirtiest River." But with watershed improvements, wastewater treatment upgrades and planned tertiary treatment in 2005, the Pawtuxet's water quality has improved significantly and supports many riverine wildlife species. Bringing back the herring and

shad will not only have great ecological impact; it will change the way people see the river. Seeing an abundance of fish teeming up the Pawtuxet, people will appreciate and better understand the need to invest in the restoration of all our rivers and watersheds. This project has already gained considerable headway and support from communities, legislators, state and federal agencies, nonprofits and the business community and has collected commitments of nonfederal funding totaling $25,000; an additional nonfederal $50,000 is anticipated from the R.I. Habitat Restoration Trust Fund. This funding, coupled with a separate small grant from the federal U.S. Fish & Wildlife Service and proposed EPA Watershed Initiative funding would put the project "over the top" and allow for mid-2003 implementation.

Project design is underway; public meetings are in the works to explain the project to the public and agreements for committed funding are in process. Upon completion of the project, the R.I. Department of Environmental Management will monitor the fish passage and provide fish counts as well as monitor the effectiveness of the passage device. The Pawtuxet River Watershed Council will organize volunteers to assist RIDEM in monitoring activities. **Project Specifics**: Time frame for implementation: 18 months from receipt of Watershed Initiative funds. Amount requested: $50,000 Total project cost: $153,000. Design, Engineering, Permitting: Preliminary design underway for completion early 2003

Three Mile River Fish Passage: This project consists of the installation of two fish ladders on the first two dams (Harrodite and Raytheon) located on the Three Mile River, a tributary of the Taunton River. The installation of these ladders will allow river herring and shad to access a 1,000-acre plus impoundment. The fish ladder for the Harrodite Dam has been already purchased. The fully funded first ladder is scheduled for installation by November 18, 2002. State wildlife agencies have committed to providing fish stock. **Project Specifics**: Time frame for implementation: 24 months from receipt of Watershed Initiative funds. Costs for the projects include bidding, engineering inspection, purchase of one fish ladder for the Raytheon Dam, and construction. Amount requested: $40,000 Total project cost: $109,000. Design, Engineering, Permitting: Project is designed and ready to bid.

Wood-Pawcatuck River Fishway Rehabilitation at Bradford Dam: This fish passage rehabilitation project is necessary to correct an erosion problem that has damaged operation of an existing fish ladder and threatens to cause ladder failure in left unadressed, cutting off many miles of riverine fish habitat. The Wood Pawcatuck river system contains some of the most pristine river segments in Rhode Island and supports a significant anadromous fish run. The project proponents will install pilings and an impermeable clay liner, stabilize the fish ladder, install riprap to prevent future erosion, install vegetative cover, and provide a small boardwalk to improve public access and educational opportunities. **Project Specifics**: Time frame for implementation: 18 months from receipt of Watershed Initiative funds. Amount requested: $21,900. Total project cost: $39,250. Design, Engineering, Permitting:

Narragansett Bay Eelgrass Restoration Project: Millions of dollars are invested annually to reduce nutrient runoff from watersheds. The effectiveness of this investment can be monitored through the recovery of our critical marine habitats such as eelgrass. Seagrass species throughout the world support diverse communities of finfish, shellfish and invertebrate species. Eelgrass beds are also a primary source of food and shelter to an abundance of marine life including economically important finfish and shellfish species. Eelgrass bed vitality is a good indicator of an estuary's ecological health. In Narragansett Bay, eelgrass is in peril. The majority of eelgrass beds that once existed in Narragansett Bay have been lost – only about 100 acres remain today. The major environmental group Save the Bay, in partnership with University of Rhode Island, will work to further the efforts of eelgrass restoration and monitoring of submerged aquatic vegetation habitat within the Narragansett Bay Watershed. This proposed eelgrass restoration project uses a unique multifaceted approach of using a wide variety of techniques to increase restoration success and acreage while reducing costs and minimizing disturbance to natural eelgrass beds, which act as donor beds. By growing eelgrass for restoration from seed, this project will provide a sustainable source of seed in the future without negatively impacting natural beds.

The primary project goal will be to apply an innovative eelgrass restoration technique resulting in 1.5 acres of restored eelgrass habitat at three sites within the first year, doubling to three acres in the second year. This restoration will be conducted using the TERF™ transplant technique and will utilize plants reared from seed in flow through seawater tanks. An innovative eelgrass seeding machine developed by University of Rhode Island researchers will be used along side existing whole plant techniques to increase the potential restoration area while minimizing effort. The combination of sustainable whole plant transplanting and mechanized seeding has the potential to yield extensive and immediate benefits by helping to restore a vital and depleted coastal habitat. **Project Specifics**: Time frame for implementation: Ready for immediate start with completion within 24 months. Amount requested: $287,324. Total project cost: $379,724. Design, Engineering, Permitting: Technology design completed; seeding devices partially constructed.

Narrow River Fish Run Sediment Removal: The Narrow River has been home to a herring run since colonial times. However, land development along the shores has resulted in increased nonpoint loadings to the river. This project will install a stormwater BMP that will remove significant sediment loads, improving water quality and clarity and protecting the herring run. **Project Specifics**: Time frame for implementation: 18 months from receipt of Watershed Initiative funds. Amount requested: $85,714. Total project cost: $113,714. Design, Engineering, Permitting: Project is designed and ready to bid.

Ten Mile River Fish Run: Blackinton Water Quality Improvement Project: Blackinton Pond is part of the Ten Mile River system, upstream of planned fish passage projects. A U.S. Army Corps Feasibility Study for fish passage on the Ten Mile is near completion, conceptual designs have been done, and there is strong local and state support to provide passage over three dams. The river courses through underserved urban areas and fishermen can often be found along its shores. In fact, local fishermen have been responsible for keeping the anadromous fish run alive by carrying herring and shad in buckets over the first dam. Both states have committed to providing fish stock and restoring water quality on this river. This project is a priority TMDL implementation action in the Ten Mile River Watershed Action Plan. Stormwater controls will reduce contaminated sediment and nutrient loadings to the river. **Project Specifics**: Time frame for implementation: 24

months from receipt of Watershed Initiative funds. Amount requested: $234,213 Total project cost: $317,888. Design, Engineering, Permitting: Conceptual design and cost estimates complete.

Ten Mile River Fish Run: Whitings Pond Water Quality Improvement Project: Whitings Pond is a twenty-five acre impoundment along the main stem of the Ten Mile River located in North Attleborough, Massachusetts. This project, a priority TMDL action in the Ten Mile River Watershed Action Plan, will install three structural BMPs to address nutrients at the stormwater inlets to the pond. This segment of the Ten Mile River is on the 303(d) list of impaired water bodies for nutrients, pathogens and metals. Based on a March 1996 diagnostic study, the pond receives 70% of its nutrients from runoff; the installation of BMPs at the three stormwater inlets directly discharging into the pond would remove 60% of the phosphorus and thus reduce the nutrient loading by 17% in the pond and the Ten Mile River downstream. This reduction would contribute directly to greater public health and safety by reducing algae blooms and improving water clarity, supporting fish run restoration. **Project Specifics**: Time frame for implementation: 24 months from receipt of Watershed Initiative funds. Amount requested: $123,000 Total project cost: $205,000. Design, Engineering, Permitting: Conceptual design and cost estimates completed.

Blackstone River Fish Run: Leesville Pond Water Quality Improvement Project: The Leesville Pond watershed is the largest of the Blackstone River headwater sub-watersheds. The Mass. Department of Environmental Protection has completed Upper Blackstone nutrient TMDLs for Leesville Pond and the other ponds in this sub-watershed. The Leesville Pond Association has been working with Mass. Riverways program to conduct both stream and pond surveys to locate and address issues raised in the TMDL for Kettle Brook sub-watershed. The survey identified structural BMP locations, outreach and education to address point and non-point pollution and the refurbishing of the dam at Leesville Pond to not only address problems in the pond but watershed hydrology as well. **Project Specifics**: Time frame for implementation: 24 months from receipt of Watershed Initiative funds. Amount requested: $119,000. Total project cost: $180,100. Design, Engineering, Permitting: Preliminary design completed.

Special BayWAG Grant Program Element: Fisheries Restoration and Supporting Water Quality Improvements: This

program provides funding that targets smaller watershed plan priority projects that are ready to go. The first BayWAG project solicitation process took place in May 2002; planning has been underway for the next round in 2003. If EPA funding is received, the process could begin as so on as funds are available and would be modified slightly to target the goals of this proposal. Projects will be selected through the existing or modified watershed-wide BayWAG grant program competitive process. This is also a fast track implementation process; grants awarded in June 2002 are in progress and will be largely completed by June 2003. This grant program was introduced in 2002 with $122,000 contributed by the Massachusetts Department of Environmental Protection and the Narragansett Bay Estuary Program. The program selection committee received requests for over $400,000 in environmental improvement projects. The BayWAG program has helped flush out some excellent watershed projects that were not included in previous planning processes. It has been well received by watershed groups and communities as it creates an exciting pool of funds for priority environmental improvement implementation projects.

Project Specifics: Time frame for implementation – Projects in place by June 2003; completion within 18 months. Amount requested: $100,000 Total project cost: $155,150 (excluding additional $55,000 of other federal NEP funds committed to the program).

TOTAL EPA WATERSHED INITIATIVE GRANT REQUEST: $1,134,362. Total Match: $558,300 (31.5% of total project cost). For detailed budget information see Appendix C., *Project Budget Pages.*

WATERSHED PROJECT MANAGEMENT: The grant applicant is the Partnership for Narragansett Bay (PNB representative Richard Ribb is point of contact and overall proposal plan manager). Fiscal and contractual duties will be the responsibility of the Massachusetts Executive Office of Environmental Affairs and the R.I. Rivers Council. Implementing parties for individual projects include the Pawtuxet River Authority, R.I. Department of Environmental Management, The Narragansett Bay National Estuary Program, Mass. Executive Office of Environmental Affairs – Mass. Watershed Initiative, Save The Bay, Inc., the Wood-Pawcatuck Watershed Association, the City of Attleboro, Mass., the Town of North Attleboro, Mass.

Conservation Commission, the Town of Auburn, Mass., and the Town of Narragansett, R.I. These entities all have significant successful track records for managing grants, possessing technical expertise and implementing projects in a timely manner. The Narragansett Bay Estuary Program and the Massachusetts Watershed Initiative Team Leaders for the Blackstone, Taunton and Mt. Hope/Narragansett Bay watersheds will provide coordination, reporting, QA/QC and other technical assistance to implementing organizations.

STAKEHOLDER INVOLVEMENT: Because this proposal is based on the collaboration of governmental and nongovernmental watershed initiatives in both state, stakeholder support and participation is very broad, including state and federal agencies, watershed councils, municipalities, a National Estuary Program, the many organizations represented on watershed teams and councils, an interstate water quality commission, conservation commissions and other organizations. In addition, the Partnership for Narragansett Bay represents over 40 diverse Bay stakeholder organizations. Support letters for the proposal are appended.

OUTREACH ACTIONS RELATED TO IMPLEMENTATION: In terms of publicizing the projects results, one key tool that will be used is the Narragansett Bay Journal, published by the PNB and dedicated to providing news and information about the Bay and watershed to watershed residents. EPA Watershed Initiative-funded projects will be the subject of featured articles in this publication. The paper reaches over 100,00 watershed residents per issue and is distributed widely as newspaper inserts, bundled distribution, mailed bundles to each library and school in the Bay watershed and to a 7,000 plus subscriber mailing list. Of course, project implementers will publicize at the local and state level through newsletters, presentations, websites and events. The Narragansett Bay Estuary Program will act as a national technology transfer conduit by sharing the results throughout the nationwide National Estuary Program and will present this information at national conferences such as Coastal Zone 2003 and other national and regional technology transfer conferences.

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